



Glenn Research Center



Combustion Experimental Measurement Requirements

◆ Temperature

• Gas Phase

- Point: 12 locations
up to 1 kHz
280-2000 K
- Field: 0.5-2 mm resolution
1-35 cm field of view
60/sec
280-2000 K

• Condensed Phase

- Point: 20 locations
30 Hz
200-1100 K
- Field: 0.2-0.5 mm resolution
4-20 cm field of view
60/sec
280-350 K

• Radiation

- 5 locations
30 Hz
200 nm-20 μm

◆ Flow Visualization and Imaging

- Visible
- Ultraviolet
- Infrared
- Up to 100/sec
0.01-5 mm resolution
1-35 cm field of view
0.4-30 cm depth of field

◆ Velocity

- Point: 1-20 locations
2-1000 Hz
1-5000 cm/sec
- Field: 30-60/sec
2-15 cm field of view

◆ Species

- Soot volume fraction and temperature:
4 locations
0.01-0.3 cm resolution
0.03-9 cm field of view
- Soot Morphology
- Gas composition

◆ Pressure

- 4 locations
up to 1 kHz
0-10 atm

◆ Acceleration

- 3 axis
 10^{-6} - 10^{-2} g/ g_0